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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,549

03/27/2006

Deepak S. Turaga

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

BURD, KEVIN MICHAEL

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

05/13/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,549	Applicant(s) TURAGA ET AL.	
	Examiner Kevin M. Burd	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 10-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 10-18 discloses a process that is not tied to another statutory class nor transforms underlying subject matter to a different state or thing. Claims 19-27 recite a digitally encoded video signal. An electromagnetic signal is not one of the four statutory classes of subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

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Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Ye (2008/0123740)

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, 10 and 19, Ye discloses a digital video transmitter shown in figure 1. To separate and remove noise from the desired signal, it is known to use wavelet thresholding in the wavelet domain. A basic principle of wavelet thresholding is to identify and zero out wavelet coefficients of a signal that are likely to be noise thereby preserving the most significant coefficients. By preserving the most significant coefficients, wavelet thresholding preserves important high-pass features of a signal (paragraph 0004). This video coding is capable of locating those most significant coefficients.

Regarding claims 2, 11, and 20, Ye discloses 3-D coding is applied (figures 4a and 4b).

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Regarding claims 3, 4, 6-8, 12, 13, 15-17, 21, 22 and 24-26, Ye discloses a group of frames are filtered together and the framework is shown in figures 4a and 4b. The relationship to the previous frame is shown in figures 5a and 5b

Regarding claims 5, 9, 14, 18, 23 and 27, Ye discloses the overcomplete wavelet video coding uses adaptive motion compensated temporal filtering. The motion estimators generate one or more motion vectors, which estimate the amount of motion between a current video frame and a reference frame and produce one or more motion vectors (paragraph 0032). The circuitry comprises motion estimation and motion compensation blocks (figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van der Schaar et al "Fully Scalable 3-D Overcomplete Wavelet Video Coding using Adaptive Motion Compensated Temporal Filtering", International Organisation for Standardisation ISO/IEC JTC1/SC29/WG11 Coding of Moving Pictures and Audio, Shanghai, October 2002 in view of Berkner et al (US 2003/0086623).

Regarding claims 1, 10 and 19, Van der Schaar discloses a method for digitally encoding video signals using the video encoder shown in figure 3. The incoming signal

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is input to a wavelet transformer and separated into N bands. The encoder can employ different temporal decomposition levels and GOF sizes for each band (figure 6 and page 6). Van der Schaar discloses wavelet coefficients are generated by shifting one band and performing for each shift a one-level spatial decomposition (page 4). Figure 3 discloses filters that will remove noise. Van der Schaar does not disclose the video coding algorithm unit is capable of locating significant wavelet coefficients. Berkner discloses de-noising may be performed by setting all coefficients below a given threshold to zero. This technique is known as hard-thresholding and is well known in the art. As an alternative, soft-thresholding, e.g., shrinking the coefficients above the threshold toward zero by the amount of the threshold can also be considered (paragraph 0069). These techniques are well known and such techniques may be advantageously used for overcomplete wavelet decompositions (paragraph 0069). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the wavelet de-noising techniques of Berkner which are advantageously used in overcomplete wavelet decompositions into the method of overcomplete wavelet decompositions of Van der Schaar. The wavelet thresholding techniques locate significant wavelet coefficients across space and time.

Regarding claims 2, 11 and 20, Van der Schaar discloses applying 3-D morphological significance coding technique (title).

Regarding claims 3, 4, 6-8, 12, 13, 15-17, 21, 22 and 24-26, Van der Schaar discloses a group of frames are filtered together and the framework is shown in figures 5a and 5b.

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Regarding claims 5, 9, 14, 18, 23 and 27, Van der Schaar discloses the overcomplete wavelet video coding uses adaptive motion compensated temporal filtering in pages 3-6. The circuitry comprises motion estimation and motion compensation blocks (figure 2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M. Burd/
Primary Examiner, Art Unit 2611
5/10/2010